

Assessment Methodologies – Minnesota Perspectives

7th Annual Surface Water Monitoring and
Standards Meeting, Chicago, IL
March 19, 2008

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Minnesota Perspectives

- Process
- Where Independent Applicability applies
- Where Weight of Evidence applies
- Rationale
- Federal guidance and Minnesota methods
- Science, policy and legal perspectives

Process

■ Pre-assessment

- ◆ Automated screening of data identifying waters meeting:
 - minimum data requirements,
 - appropriate periods of record, and
 - showing the necessary exceedances of impaired thresholds.

Process (continued)

■ Data Review

- ◆ Conducted by group familiar with the data
- ◆ Deals with unforeseen aspects of the multi-step assessment process
- ◆ Addresses complexity of aquatic ecosystems
- ◆ Creates latitude in interpreting protocols, methods and results
- ◆ Means of extracting valuable information

Process (continued)

■ Impairment Decision

◆ Professional Judgment Team (PJT)

- Formed for each basin
- MPCA staff along with representatives from groups familiar with the data
- MPCA chairs meetings
- If consensus is not attained, MPCA makes final determination
- Transparency – decision record becomes part of database that documents the proceedings of the PJT

Where Independent Applicability Applies

- When quality data are available from multiple indicators, exceedance for any one indicator normally shows impairment
- Typically a waterbody should meet multiple assessment tests to be considered unimpaired

Where Weight of Evidence Applies

- Examples of where Weight of Evidence might be used:
 - ◆ Data set meets listing criteria but is weak
 - ◆ Narrative standards
 - ◆ Multiple indicators showing unclear results
 - High variability, therefore low confidence
 - May suggest need for additional monitoring
 - ◆ Citizen's data – need for corroboration

Rationale

- Assessment process is based on:
 - ◆ Current standards
 - Numeric standards for chemical parameters
 - Narrative standards for biological parameters
 - ◆ EPA guidance
 - ◆ Legal compliance
- Assessment methodology has to be flexible with changes in our understanding of science and changes in standards

Federal Guidance and Minnesota Methods

- When assessing a beneficial use, assuming data is of sufficient quality, if one type of data indicates non-attainment the water body is generally assumed to be impaired.
- MN's approach, through the BPJ process, allows consideration of data quality within each type of data.

Perspectives

- Science
 - ◆ Need both Independent Applicability and Weight of Evidence – not mutually exclusive
 - ◆ Complexity in the decision process tends to increase with increased number of indicators
 - ◆ Need for a well-defined framework or decision making process when utilizing Weight of Evidence approach

Perspectives (continued)

■ Policy

- ◆ The policy-maker needs to explain to stakeholders the rationale for assessment methodology and get their “buy-in”
- ◆ Assessment methods need to be transparent, inclusive, consistent and comprehensive
- ◆ Close dialog between policy-makers and legal council is imperative

Perspectives (continued)

Legal

- ◆ Assessment methods need to be defensible
- ◆ Weight of Evidence approaches, although desirable to the scientist, may be more difficult to defend legally
- ◆ Need for flexibility when dealing with complex systems